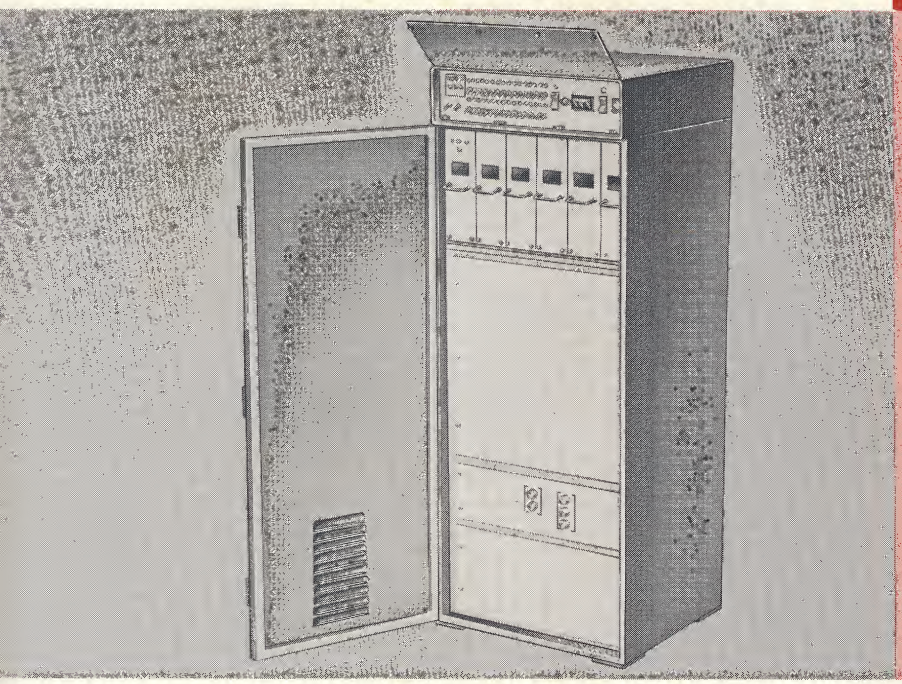
LIBRASCOPE engineering data



L-424M

militarized disc-memory system

DESCRIPTION — The L-424M Disc Memory System is a militarized, high-speed, random-access, information-storage system designed for use with Univac 1218 (CP-789) computers and other computer systems compatible with NAVY TACTICAL DATA SYSTEMS (NTDS) high-speed interface requirements. The Model L-424M consists of two principal subsystems: (1) a magnetic mass memory to provide data storage, and (2) an electronic subsystem that provides the necessary interface, control, and read/write electronics. Storage capacity of the L-424M mass memory is 25 million bits. The technique of information storage and retrieval is fixed address. Average access time to any data is 25 milliseconds.

SPECIAL FEATURES — The mass memory of the L-424M system features a flying-head design , plated-cobalt recording surfaces, and retractable head bars which ultimately prevent any head or disc wear. Each head-bar retraction mechanism is controlled by a programmed power-sequence network for automatic start/stop conditions. This enables the discs to perform perfectly for extended periods, despite multiple starts and stops.

All materials, tolerances, and design proportions of the basic structure are selected to compensate for the temperature differentials that the disc assemblies may encounter in storage and during operation. The discs and supporting structures are made of aluminum to provide strength, rigidity, and lightness of weight.

The electronics subsystem is comprised of printed circuit cards packaged in roller-mounted drawers to facilitate ease of installation and maintenance. This modular construction and a central status/maintenance panel provide the means for rapid off-line fault isolation. In systems that require high data integrity, the Ferranti complement-recording technique employed in the L-424M system provides a recognized standard.

Data is organized in message blocks of eight 36-bit words and is written into memory 2-bit parallel, 18-bit serial. Both discs in the L-424M provide storage for 36,750 message blocks of data each. A disc is divided into 175 message blocks per group of two tracks. Transfer rate of message blocks is on the order of 3.5 KC. Word transfer rate is approximately 30 KC.

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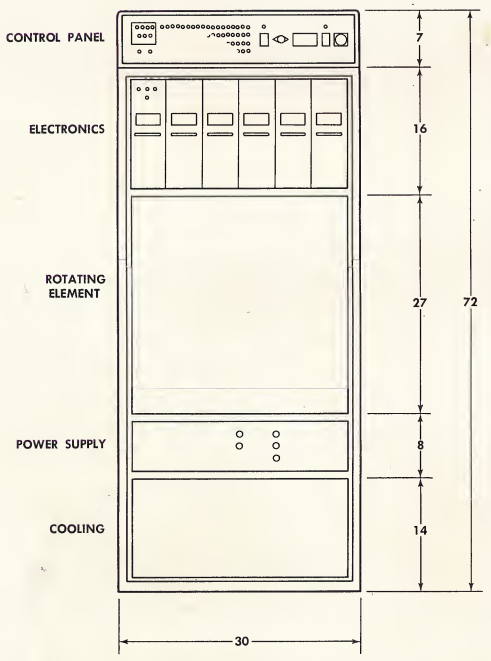
APPLICATIONS — The L-424M Disc Memory System was designed primarily for use in Navy computer systems as a main or buffer storage device. Its compatibility with NTDS high-speed interface requirements, and modular construction provide a wide range of useability.In a typical shipboard computer system, the L-424M can be packaged in a separate cabinet or can be installed as modules to meet limited space requirements. As a unit its modular construction is ideal for shipboard application where space is limited and single side (front) accessability is a necessity. Without exception all modules can be maintained from the front of the cabinet.

TYPICAL HEIGHT ALLOCATIONS



GENERAL CHARACTERISTICS

System Interface .....UNIVAC 1218 (CP-789) Fast NTDS
Maximum Access Time .....50 Milliseconds
Average Access Time .....25 Milliseconds
Total Bit Capacity 24,847,200
Data Bit Capacity 22,491,000
Bit Density (Max.) .....624 BPI at 13.6 In. Dia.
Bits Per. Track .....26,775 Phase Modulation
Total Tracks 1024
Data Tracks 840
Spare Data Tracks 60
Timing Tracks 14
Spare Timing Tracks 14
Manufacturing Spares 96
Operating Frequency 535KC
Head Type.....Retraction Type, Aerodynamic, 16 Heads Per Bar, Center Tapped Bifilar Winding
Number Of Discs 2
Overall Disc Diameter .....24 Inches
Recording Diameter .....13.6 To 23.2 Inches
Disc Speed .....1200 RPM (less slip; 5% max.)
System Overall Dimensions .....26.12 x 29.50 x 72.0 inches
Power Requirements
Disc Subsystem .....208/120VAC, 60 CPS, 3 Phase
Electronics Subsystem .....120 VAC, 60 CPS, Single Phase
Cooling Requirements .....1000 CFM, Air

COMPONENTS DIVISION

GENERAL PRECISION INC.

LIBRASCOPE GROUP

General Precision, Inc., is the principal operating subsidiary of General Precision Equipment Corp., Tarrytown, N.Y.

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